

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-028465**Date Inspected:** 22-Sep-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** As noted below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

**QC UT 12E-E2.1 (Exterior)**

This QA Inspector randomly observed QC Inspectors Andrew Keech and Bernie Docena at 12E-E2.1 on the exterior of the OBG performing Ultrasonic Testing (UT). The QC Inspectors were observed scanning from each side of the weld and the scanning pattern as described in D1.5 6.24. The QC Inspectors were noted as identifying rejectable indications and the work at this location is ongoing and appeared to be in general conformance with the contract documents and SE-UT-D1.5-CT-100-Revision 4.

**12E-E2.1 (Interior)**

This QA Inspector randomly observed the Visual Testing (VT) indication repairs conducted by ABF/JV qualified welder Xiao Hua Luo #1291 on the overhead weld seam at 12E-E2.1 on the interior of the OBG. The welder performed SMAW to fill low spots followed by grinding and blending to provide a smooth consistent surface area on E2.1 between PP115 to PP115.2. QC Tony Sherwood verified the temperature and recorded the parameters as acceptable and within the requirements of ABF-WPS-D1.5-1001-Repair. The welder was observed welding the joint followed by grinding and blending of the work utilizing a small disc grinder. On a subsequent observation, this QA Inspector noted that the welding was performed in the 4G horizontal position utilizing the E7018-H4R

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low hydrogen electrodes. The 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observation no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was in progress and appeared to be in general conformance with the contract documents.

### 13E PP124.5-E5-DAH (Interior)

This QA Inspector randomly observed the excavation operations of Ultrasonic rejectable indications on the Complete Joint Penetration (CJP) joint on the Deck Access Hole (DAH) at 13E PP124.5-E5-DAH on the interior of the OBG. This QA Inspector observed ABF/JV qualified welder Wai Kit Lai #2953 performing the Carbon Arc Gouging (CAG) method to remove metal from the material. The welder was observed cleaning up the excavations utilizing a small disc grinder and a de-burring drill. Upon completion of the excavation, Quality Control (QC) Inspector John Hays performed a Magnetic Particle Inspection (MT) of the site to determine soundness of the metal and observed no indications, QC then measured the dimensions of the excavations for length, width and depth. This QA Inspector recorded the dimensions of the excavations as:

Y=3190mm; 500mm in length, 30mm wide and 11mm deep, y=3750mm; 150mm in length, 32mm wide and 11mm deep, y=3945mm; 150mm in length, 25mm wide and 11mm deep.

Prior to welding, QC Inspector John Hays was observed monitoring and measuring the pre-heat temperatures and parameters as they pertain to ABF-WPS-D1.5-1004-Repair-Revision 0. This QA Inspector made random observations of SMAW in the 4G overhead position and noted no issues with the work at this location and at the time of this repair, no RWR was required for this first time weld repair. This QA Inspector made subsequent observations throughout the shift to monitor quality and it was noted that the E7018-H4R electrodes were stored properly in a sealed container after being opened and they were drawing amperage of 136. The welder was observed continuing the in process repair welding and this QA Inspector noted that no issues were present at this location. QC Inspector John Hays was also present to monitor the welding and the parameters in the later stages of the shift. This QA Inspector noted that the work at this location was completed on this date and appeared to be in general conformance with the contract specifications.

### 12E PP116.5-E5-DAH (Exterior)

This QA Inspector randomly observed the excavation operations of Ultrasonic rejectable indications on the CJP joint on the DAH at 13E PP116.5-E5-DAH on the interior of the OBG. This QA Inspector observed ABF/JV qualified welder Wai Kit Lai #2953 performing the Carbon CAG method to remove metal from the material. The welder was observed cleaning up the excavations utilizing a small disc grinder and a de-burring drill. Upon completion of the excavation, QC Inspector John Hays performed a MT of the site to determine soundness of the metal and observed no indications, QC then measured the dimensions of the excavations for length, width and depth. This QA Inspector recorded the dimensions of the excavations as:

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Y=3995mm; 1000mm in length, 27mm wide and 13mm deep.

Prior to welding, QC Inspector John Hays was observed monitoring and measuring the pre-heat temperatures and parameters as they pertain to ABF-WPS-D1.5-1004-Repair-Revision 0. This QA Inspector made random observations of SMAW in the 4G overhead position and noted no issues with the work at this location and at the time of this repair, no RWR was required for this first time weld repair. This QA Inspector made subsequent observations throughout the shift to monitor quality and it was noted that the E7018-H4R electrodes were stored properly in a sealed container after being opened and they were drawing amperage of 136. The welder was observed continuing the in process repair welding and this QA Inspector noted that no issues were present at this location. QC Inspector John Hays was also present to monitor the welding and the parameters in the later stages of the shift. This QA Inspector noted that the work at this location was in progress and appeared to be in general conformance with the contract specifications.

### Summary of Conversations:

Conversations relevant to work performed.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas 916-764-6027 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Frey,Doug	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

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